

REMARKS

Claims 1-62 were presented for examination and were pending in this application. In an Office Action dated October 30, 2007, claims 1-17 were rejected and claims 18-62 were withdrawn from consideration. In response, claims 1, 7-9, 11-14, 16 and 17 are amended, and claim 6 is cancelled. Claims 1-5 and 7-17 are pending upon entry of this amendment.

Response to Rejection Under 35 USC § 102(e)

Claims 1-5 and 7-11 stand rejected under 35 U.S.C. § 102(e) as being obvious by Koo, U.S. patent no. 6,901,447. Since claims 1-5 and 7-11 stand rejected under 35 U.S.C. § 102(e) and only one reference is cited, Applicant assumes that the Examiner meant claims 1-5 and 7-11 are anticipated by Koo. Applicant respectfully traverses this rejection as applied to the amended claims.

The independent claim recites a system for dynamically routing a message over a network having a first node and a plurality of other nodes. The system comprises a publisher, a plurality of subscribers and a broker. The publisher has an output for generating and sending a message on a topic. Each of the plurality of subscribers has an input for receiving the message. Additionally, at least one of the plurality of subscribers subscribes to the topic. The broker has an input, an output and a topic/node table. The input of the broker is coupled to the output of the publisher, and the output of the broker is coupled to the inputs of the plurality of subscribers. The broker is associated with the first node and in response to receiving the message, identifies the topic associated with the message and determines using the topic/node table and the identified topic which of the plurality of other nodes to which to send the message.

Specifically, amended claim 1 recites:

a publisher for generating and sending the message on a topic, the publisher having an output; a plurality of subscribers each having an input for receiving the message, at least one of the plurality of subscribers subscribing to the topic; and a broker having an input, an output and a topic/node table, the broker associated with the first node, in response to receipt of the message, the broker **identifying the topic associated with the message and determining using the topic/node table and the identified topic which of the plurality of other nodes to which to send the message** for delivery to the one of the plurality of subscribers subscribing to the topic, the input of the broker coupled to the output of the publisher, and the output of the broker coupled to the inputs of the plurality of subscribers.

The elements related to using the topic/node table to determine which of the plurality of other nodes to which to send the message were previously recited by cancelled claim 6. Support for the amended claims is found throughout the specification and specifically at ¶0071-¶0072.

The claimed invention is beneficial because the publisher does not need to be involved in sending a generated message on a topic to the appropriate subscribers. The publisher simply sends the message to a broker and the broker uses a topic/node table and the topic of the message to send the message to the appropriate subscribers. This system operates on a distributed computing network and since the broker uses a topic/node table, a message on any topic can be sent through any path in the distributed computing network, which allows the broker to select the best path for sending a message. No path in the distributed computing network is restricted to carrying messages on a specific topic. Additionally, the system is simple for the subscriber because a subscriber only has to subscribe to a topic and messages for that topic are dynamically and automatically routed to the subscriber without any manual or administrative operations.

Koo does not disclose “identifying the topic associated with the message and determining using the topic/node table and the identified topic which of the plurality of other

nodes to which to send the message.” Koo discloses a communication system containing a plurality of channels. Each channel in Koo’s system contains an access control list which contains data indicating the publishers and subscribers connected to the channel. See Col 6, lines 61-64. The channel uses the references stored in the access control list to publish the data to **all** connected subscribers. See Col 9, lines 1-2. Therefore, the channel must publish data to **all** subscribers that contain a reference stored in the channel’s access control list.

In contrast, the broker in the claimed invention can but **is not required to** send a message received from a publisher to all connected subscribers. The broker dynamically identifies the topic of a message and using the topic/node table determines which of the plurality of other nodes to which to send the message. The topic/node table contains multiple subscribers, but the broker does not send a message to all subscribers in the topic/node table. Instead, the broker will **only** send a message associated with a specific topic to subscribers that have subscribed to receive messages associated with the specific topic. See Figure 5 and ¶0071- ¶0072. The claimed invention allows the same “nodes” (“channels” in the language of Koo) to send data to different sets of subscribers. This is not possible with the “channel” of Koo.

Thus, Koo does not identify the topic associated with a message, as claimed. Nor does Koo use a topic/node table and the identified topic to determine which of the plurality of other nodes to which to send the message. Instead, Koo discloses a channel publishing data to **all** subscribers connected to the channel. Koo does not identify the topic associated with a message because a message sent on a channel is sent to **all** subscribers connected to the channel. Additionally, Koo does not disclose a subscriber being able to subscribe to a channel for receiving messages on a specific topic.

In the rejection of claim 1 the Examiner cites the “event service” of Figure 6 in an effort to show that Koo discloses a broker. Koo discloses the “event service” as software to establish a plurality of channels. Additionally, the “event service” includes a channel factory object for creating channels. See Col 5, line 63 through Col 6, line 48. Koo discloses the “event service” being used for the initialization of channels, but Koo does not disclose the “event service” software being used to route messages. Therefore, Koo’s “event service” cannot be equated to a broker as claimed, as it does not identify the topic associated with a message, and certainly does not disclose using a topic/node table and the identified topic of the message to determine which of the plurality of other nodes to which to send the message.

It should be noted that claim 6 was rejected, but the Examiner did not provide a reason for the rejection of claim 6. In the rejection of claim 7, the Examiner provides comments in support of the rejection that state that the topic/node table is the access control list disclosed by Koo in Col. 6, lines 43-45. The access control list includes the subscribers and publishers connected to the channel. Koo discloses using all references stored in the access control list to publish data to all connected subscribers. In contrast, the topic/node table contains multiple subscribers and the topics to which each subscriber has subscribed. It is the relationships in the node table that are used by the claimed invention, and not disclosed by Koo. Koo does not disclose the channel or the event service identifying the topic of a message and using the access control list to determine to which other nodes to send the message.

Based on the above Amendments and the preceding Remarks, Applicant respectfully submits that for at least these reasons claim 1 is patentably distinguishable over Koo. Therefore, Applicant respectfully requests that the Examiner reconsider the rejection of claim

1, and withdraw it. Claims 2-5 and 7-17 depend from claims 1, and therefore, include the limitations of the base claim 1. Additionally, claims 2-5 and 7-17 recite other patentable distinctions. Thus, claims 2-5 and 7-17 are likewise believed to be patentable over the cited art. Applicant respectfully requests allowance of claims 1-5 and 7-17.

REJECTIONS UNDER 35 U.S.C. § 103

Claims 12, 13, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koo in view of Nakata U.S. patent no. 6,452,934. Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Koo in view of Leighton U.S. patent no. 7,096,263. Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Koo in view of Olson U.S. patent no. 5,245,616.

For the reasons described above with respect to the § 102 rejection, Koo fails to disclose identifying the topic associated with a message and determining using the topic/node table and the identified topic which of the plurality of other nodes to which to send the message. Nakata, Leighton nor Olson remedies the deficiencies of Koo. Nakata, Leighton nor Olson articulates the element of identifying the topic associated with a message and determining using the topic/node table and the identified topic which of the plurality of other nodes to which to send the message. Therefore, even if Nakata, Leighton or Olson were combined with Koo as the Examiner suggests, such combinations would not yield the claimed invention. Applicants submits that claims 12-17 are not made obvious by the combination of Koo and Nakata, Leighton or Olson, therefore, claims 12-17 are patentable. Applicant respectfully requests allowance of claims 12-17.

On the basis of the above, Applicant respectfully submits that the claims recite allowable subject matter. Allowance of all claims is requested. If the Examiner believes that direct contact with the Applicant's attorney will advance the prosecution of this case, the Examiner is encouraged to contact the undersigned as indicated below

Respectfully Submitted,
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